SONY

3-753-627-12 (1)

LW/MW/SW/FM Stereo PLL Synthesized Receiver

ICF-SW77

Operating Instructions page 2

Before operating the unit, please read this manual thoroughly and retain it for future reference.

Mode d'emploi page 36

Avant la mise en service de cet appareil, veuillez lire attentivement ce mode d'emploi et le conserver à toutes fins utiles.

Manual de instrucciones página 70

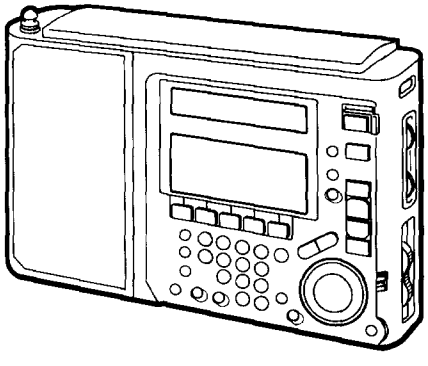
Antes de emplear la unidad, lea este manual de instrucciones, y consérvelo para futuras referencias.

Bruksanvisning sidan 104

Läs noga igenom bruksanvisningen för att lära känna till radion och dess användning. Spara bruksanvisningen.

Manual de instruções página 138

Antes de utilizar o aparelho, leia atentamente este manual e guarde-o para futuras consultas.



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English

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The ICF-SW77 is available in various models with differences in frequency coverage and other variances, corresponding to the regulations of different countries.
The main differences are shown in the following table. Please check the type of your unit with respect to each item. The AM (LW/MW/SW) and FM frequency ranges are indicated inside the top panel of your unit.

Despite the above differences, the operating procedure of all the units are identical. The differences are clearly described in the text as required.

Type	Frequency coverage			
	FM	LW	MW	SW
1	76.0–108 MHz	150 ———	———	29,999.9 kHz
2	87.5–108 MHz	150 ———	———	29,999.9 kHz
3	87.5–108 MHz	150–285 kHz	531———	26,100 kHz
4	87.5–108 MHz	150–285 kHz	531–1,602 kHz	3,850–26,100 kHz

Type	SSB reception	Type	SSB reception
1	Provided	3	Not provided (No SSB key)
2	Provided	4	Provided

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WARNING

WARNING

To prevent fire or shock hazard, do not expose the set to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

INFORMATION (For the Customers in U.S.A.)

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient the receiving antenna
Relocate the equipment with respect to the receiver
Move the equipment away from the receiver
Plug the equipment into a different outlet so that equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:
"How to Identify and Resolve Radio-TV Interference Problems". This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

Important notice about repairing this unit

When you ask your dealer to repair this unit, it is possible that the memorized data that you have programmed in the unit will be erased. The erased data is not guaranteed by the dealer. We recommend you to keep a memorandum of the important data.

For the Customers in the United Kingdom

Important
The wires in this mains lead are coloured in accordance with the following code:
Blue: Neutral
Brown: Live
As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.
Do not connect either wire to the earth terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ or coloured green or green-yellow.

Owner's Record

The model number and the serial number are located at the rear. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. ICF-SW77 Serial No. _____

Features

- An LW/MW/SW/FM portable receiver with worldwide band coverage.
- Quartz controlled PLL (Phase Locked Loop) synthesizer system using a microcomputer makes pinpoint tuning easy.
- FM stereo reception for earphones.
- Smooth tuning with rotary manual tuning dial.
  For AM reception, you can tune in by 50 Hz interval when you select "SLOW" for the tuning interval.
- Synchronous detector circuit reduces interference from adjacent stations (beats) and distortion due to fading in AM reception.

- Choice of Preset Stations direct, manual, or scan tuning.

  Preset Station Tuning...Tuning in a station by selecting the name of the preset station. (Page 12)
  Direct tuning...Tuning in the station by inputting the frequency of the station directly. (Page 16)
  Manual tuning...Tuning in the station by turning the dial. Even if you don't know the frequency of the station, you can tune in the station precisely. (Page 18)
  Scan tuning...Searching for a station automatically. (Page 20)

- Up to 162 frequencies can be memorized for Preset Station Tuning. You can edit them in any desired order. (Page 21)

  - Program Time can be memorized in the Preset Station, which enables the unit to choose the tuning frequency automatically depending on the time.
  - You can label the Preset Station with a Station Name.
  - AM mode can also be memorized.

- Several stations on the Tuning Page are already preset in this unit at the factory.

- Other features

  Clock display...You can select from local time or UTC (Universal Time Coordinated) time indication. (Page 9)
  5 sets of timer ...You can preset a desired station to be received at a desired time. (Page 27)
  Sleep timer...You can make the radio turn off automatically after 60, 30, or 15 minutes. (Page 26)
  Three different power sources...Internal batteries, house current, or car battery. (Page 8)

Precautions

- Operate the unit only on 6 V DC with four R14 (size C) batteries.
  For AC operation, use the AC power adaptor* supplied with this unit.
  For car battery operation, use the car battery cord recommended for this unit.
- The unit is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, even if the unit itself has been turned off.
- Disconnect the AC power adaptor from the wall outlet when the unit is not to be used for a long period of time.
- The name plate indicating operating voltage, etc. is located on the back of the unit.
- Use the unit within a temperature range of 0°C to 40°C (32°F to 104°F). If it is used in temperatures outside this range, an irregular display may appear on the display windows. If it is used in temperatures lower than this range the display may change very slowly. These irregularities will disappear and there will be no damage to the unit when the unit is used in its recommended temperature range.
- Do not leave the unit near heat sources, such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, moisture, rain, mechanical vibration, or shock.
- Should any solid object or liquid fall into the unit, remove the batteries, and have the unit checked by qualified personnel before operating it any further.
- Since a strong magnet is used for the speaker, keep personal credit cards using magnetic coding or spring-wound watches away from the unit to prevent them from possible damage caused by the magnet.
- When the casing becomes soiled, clean it with a soft dry cloth dampened with mild detergent solution. Never use abrasive cleansers or chemical solvents, as they may mar the casing.
- When there is lightning and you are using an external antenna, immediately disconnect the AC power adaptor (if connected) from the wall outlet. Never touch the antenna wire when there is lightning storm.
- Never connect a ground wire to a gas pipe.
- Reception of 455 kHz, 1004 kHz, 3640 kHz, and 6275 kHz may be difficult because of internal spurious signals generated by the built-in oscillators.
- In vehicles or buildings, radio reception may be difficult or noisy. Try listening near the window.

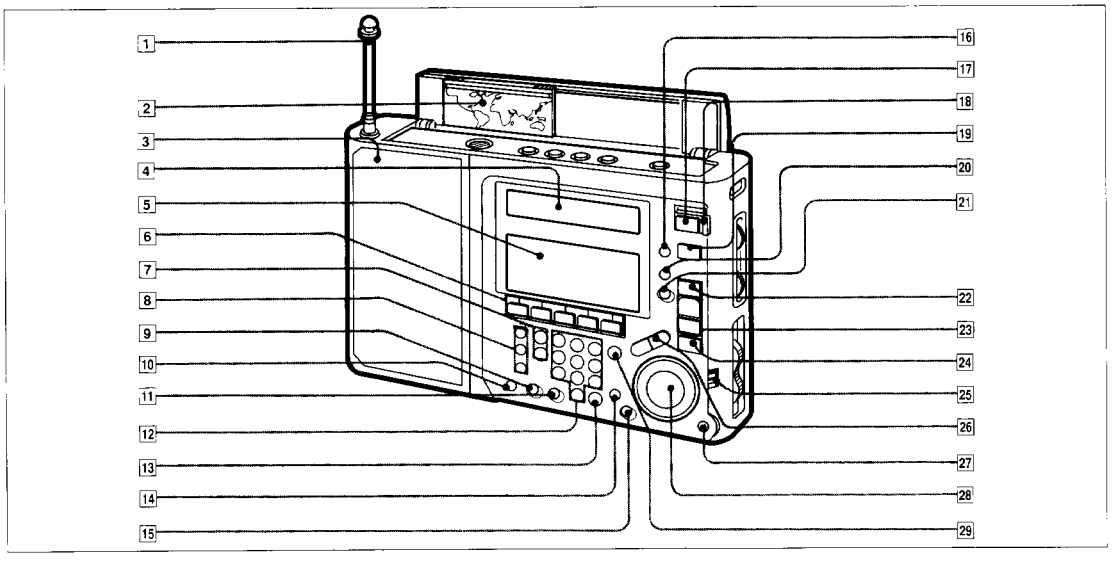
If you have any question or problem concerning your unit that is not covered in this manual, please consult the nearest Sony dealer.

*The AC power adaptor is not supplied with the model available in Australia. For an optional AC power adaptor, contact your Sony dealer.

Location and Function of Controls

Refer to the pages indicated in ● for details.

Front Panel

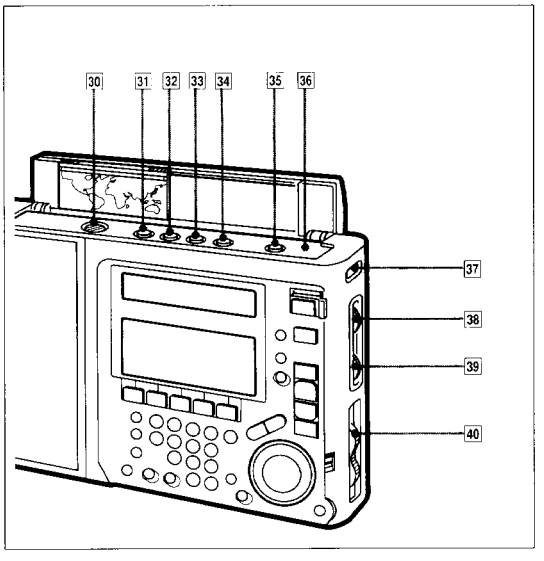


1 Telescopic antenna
2 World time scale ⑩
3 Speaker
4 Clock/timer display (for clock) ⑥
5 Frequency display (for radio) ⑥
6 S1, S2, S3, S4, S5 (station) buttons
7 Band selectors
FM button
AM button
8 MODE (AM mode) selectors ⑱
Saudi Arabian model:
WIDE/NARROW button
SYNC U button
SYNC L button
Models for other countries:
WIDE/NARROW button
SYNC button
SSB button
9 TIMER CHECK/ERASE button ㉔ ㉘
10 LIGHT button
Press to illuminate the display window for about 15 seconds.
11 ENTER button ㉑
12 DIRECT TUNE/TIME INPUT numeric buttons ⑯ ㉑
13 EXE (execute) button ⑯ ㉑
14 SCAN/AUTO TUNE button ⑳ ㉕
15 METER BAND button ⑳
16 KEY PROTECT 🔑 button ⑪
17 ON/OFF (power) button
18 POWER/LOCK switch
Set this switch to POWER, then press the ON/OFF button to turn on the radio. Set the switch to LOCK when carrying the radio. When this switch is set to LOCK, the power will not be turned on even if you press the ON/OFF button.
19 SLEEP (sleep timer) button ㉕
20 TIMER STANDBY button ㉗
21 RESERVE button ㉗
22 TIMER PAGE button ⑭
23 PAGE FEED INS CHR/DEL CHR + ▽/– ▽ buttons ⑫ ㉒
Used for changing the Tuning Page or inserting or deleting characters of the Station Name.
24 QUICK PAGE button ⑬
25 DIAL LOCK switch ⑱
26 MEMORY FREQ/METER BAND STEP/CURSOR ⇦ ⇨ buttons ⑯ ⑳ ㉒
27 AM FAST/SLOW selector ⑱
28 DIAL TUNE/JOG dial
29 EDIT button ㉑

What are the yellow and white dots marked beside the names of the buttons?

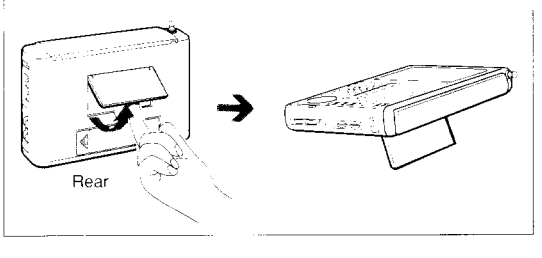
Some buttons or dials have more than one function. Yellow and/or white dots are marked beside the name of these buttons. For example, the TIMER CHECK/ERASE button has two functions. The function preceded by the yellow dot works only when the EDIT button (also marked by a yellow dot) is pressed. The function preceded by a white dot works only when the METER BAND button (also marked by a white dot) is pressed.

Top panel / Side panel

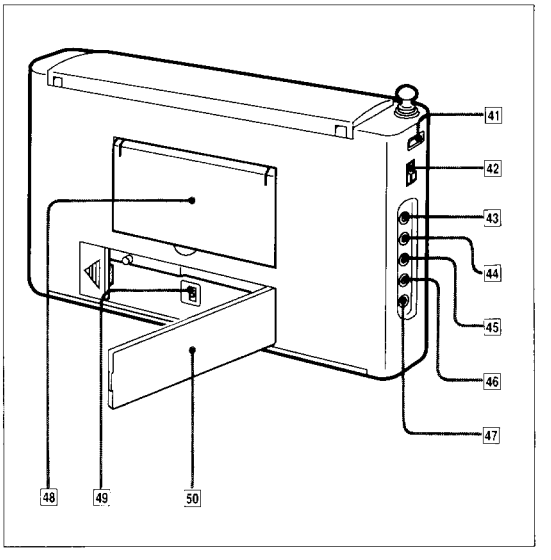


30 LCD CONTRAST dial ⓫
31 TIME SET LOCAL button ❾
32 TIME SET TIME DIFF.(difference) button ❾
33 TIME/PROGRAM selector
Each time you press this button, the clock/timer display changes between the current time and the Program Time (starting time and ending time) indications.
34 LOCAL/UTC selector ❾
35 FREE button ㉓ ㉕
36 RESET button
Press this button when other buttons do not function.
37 Holes for the carrying belt
38 TREBLE control ⓫
39 BASS control ⓫
40 VOLUME control ⓫

How to use the stand



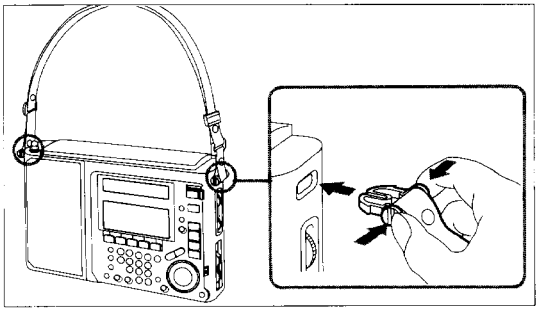
Rear panel



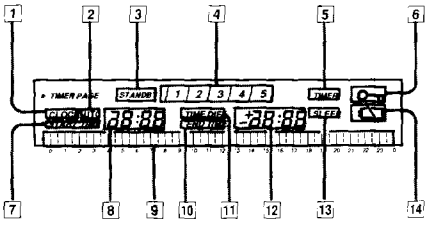
41 Holes for the carrying belt
42 SENS (sensitivity) selector
43 AM EXT ANT (external antenna) jack ㉙
44 TAPE REMOTE jack ㉚
45 TAPE LINE OUT jack ㉚
46 ∩ (earphones) jack
47 DC IN 6V ⟐⟐⟐ (external power input) jack
48 Stand
49 9 kHz/10 kHz (MW channel step) selector (inside the battery compartment) ❼
50 Battery compartment lid ❽

How to attach the carrying belt

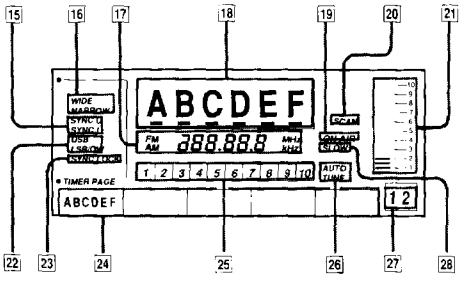
Attach the supplied carrying belt as illustrated below.



Clock/Timer Display



Frequency Display



1 CLOCK indication
Flashes while setting the current time.
2 UTC indication
Appears when the current UTC (Universal Time Coordinated) time is shown.
3 STANDBY (timer standby) indication
Appears when the timer is reserved.
4 Timer numbers
Appears when each of the timers is reserved.
5 TIMER indication
Appears when the radio is activated by the timer.
6 Key protect indication
Appears when the keys are locked.
7 START TIME indication
Appears when the starting time of the timer or program time is shown.
8 Current local time/current UTC time/starting time
9 Program Time indicating bar
10 END TIME indication
Appears when the ending time of the timer or program time is shown.
11 TIME DIFF indication
Appears when the time difference is shown.
12 Time difference/ending time/remaining time for timer and sleep timer
13 SLEEP indication
Appears when the sleep timer is operating.
14 Battery empty indication

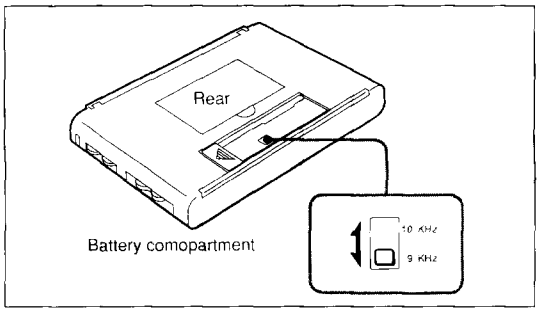
15 SYNC U/L (SYNC mode) indication
16 WIDE/NARROW (selectivity) indication
17 Band and frequency indication
18 Station Name area
19 ON AIR indication
Appears when you receive a station during its broadcasting time (Program Time).
20 SCAN indication
Appears during scan tuning.
21 SIGNAL METER (signal strength meter)
22 USB/LSB/CW (SSB mode) indication (except for Saudi Arabian model)
23 SYNC LOCK indication
Appears when synchronous detection is performed.
24 Station selection line
25 Frequency numbers
26 AUTO TUNE indication
Appears when you set the Auto Tune function and during Auto Tune scan tuning.
27 Page number
28 SLOW indication
Appears when you select "SLOW" for the manual tuning interval (for AM).

How to Change the MW Channel Step

To Change the MW Channel Step

The MW channel step is factory-set to 9 (or 10) kHz to match the frequency allocation system of the country. If you use the radio where the frequency allocation system is based on a 10 (9) kHz interval, set the MW channel step selector in the battery compartment to 10 (9) kHz by following the procedure below.

1 Set POWER/LOCK to LOCK.
2 Open the battery compartment and take out the batteries.
3 Set the 9 kHz/10 kHz selector to the appropriate channel step.
4 Install the batteries and close the battery compartment.



The frequency allocation of the area

Area	Frequency allocation system
North America, South America	10 kHz step
Other countries	9 kHz step

Note

You must change the MW channel step within 5 minutes. If more than 5 minutes elapses after the batteries are removed, the clock setting (page 9) and the data in the Quick Page (page 13) will be erased. In this case, set them again.

Power Sources

Batteries

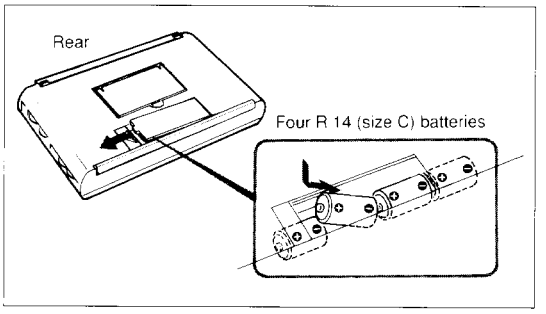
Use four R14 (size C) batteries.

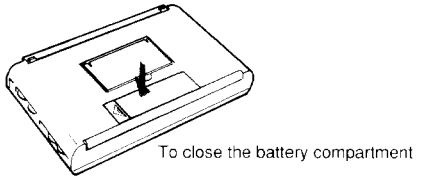
Battery installation

Note

Before installing the batteries, be sure to check that the MW channel step selector is set correctly. (See page 7.)

Install the batteries with correct polarity as illustrated below.





Notes on batteries

- This unit cannot be operated on the internal batteries when the AC power adaptor or car battery cord is connected to the DC IN 6V jack.
- Even when the unit is not to be used for a long period of time or is to be operated extensively on other power sources, keep the batteries installed to back up the clock and the built-in computer.

Battery replacement

- When the batteries are exhausted, the sound becomes weak or distorted, and the ⌂ (battery empty) indication flashes on the clock/timer display. In this case, replace all the batteries with new ones.
  Even after you replace the batteries, ⌂ remains flashing. To turn off ⌂, press ON/OFF.
- Replace the batteries within 5 minutes. Otherwise, the current time, the Quick Page settings, and the reservation for the timer will be erased. However, the data on the Tuning Pages and Timer Pages will not be erased.

House Current (except the models for Australia)

Use the supplied AC power adaptor.

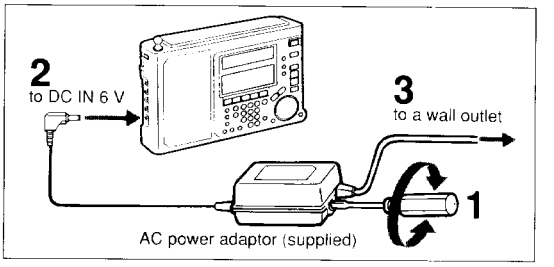
Connect the AC power adaptor to DC IN 6V and the other end to a wall outlet as illustrated below.

Note (except the models for U.K. and U.S.A.)

Before connecting the AC power adaptor, be sure to set the voltage of the adaptor to your local power line voltage with a screwdriver as illustrated.

For customers supplied with an AC plug adaptor

Use the AC plug adaptor if the AC power adaptor does not match the outlet.



Note on the AC power adaptor

Use only the supplied AC power adaptor (except the models for Australia). Do not use any other AC power adaptor.

Polarity of the plug

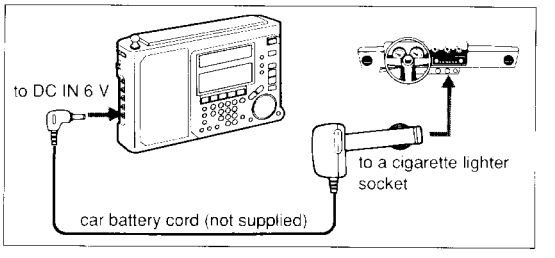
12 V car battery

Use the Sony DCC-E160L car battery cord (not supplied).

Connect the car battery cord to DC IN 6 V and the other end to a cigarette lighter socket of the car as illustrated below.

Note

When the AC power adaptor or car battery cord is connected to the DC IN 6 V jack, the internal batteries (if present) are automatically disconnected.

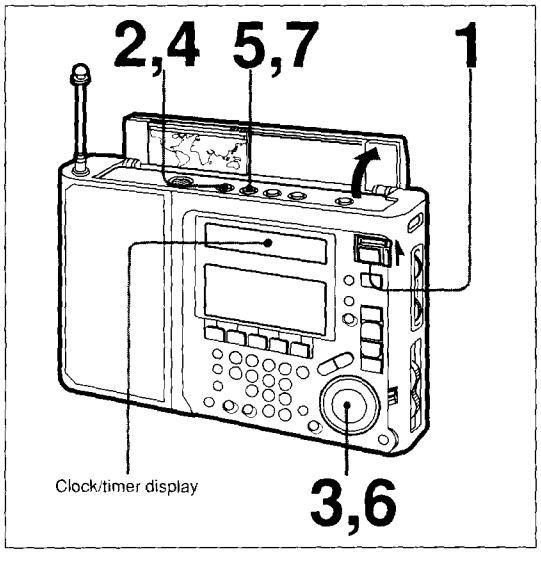


Setting the Clock

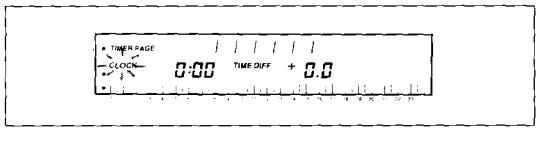
This unit is factory-set with the data for Preset Station Tuning which includes time data (page 15). For tuning in correctly, you need to set the correct local time and correct time difference from the UTC (Universal Time Coordinated) time.

Before setting the clock, check the time difference between the local time in your area and the UTC time by referring to the table on the next page.

How to Set the Clock

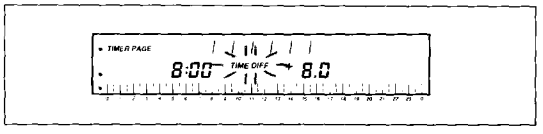


1 Set POWER/LOCK to POWER.
2 Press and hold LOCAL.
The CLOCK indication flashes.



3 Turn the DIAL TUNE/JOG dial to adjust the current local time while CLOCK is flashing.
4 Release LOCAL.

5 Press and hold TIME DIFF.
The TIME DIFF. indication flashes.



6 Turn the DIAL TUNE/JOG dial to adjust the time difference* while TIME DIFF. is flashing.
7 Release TIME DIFF.

Zero second adjustment

If you want to adjust the time exactly to the second with a telephone time signal, proceed as in the following example.
Example: To set to 15:15

1. Adjust the time indication to 15:15 and keep LOCAL depressed.
2. Release LOCAL simultaneously with the telephone time signal. The clock begins to show the precise time.

Notes on the time indication

- Each time you press the UTC/LOCAL button, the current time indication changes between the UTC time and the local time.
- You cannot set the clock by adjusting the UTC time.
- Each time you press the TIME/PROGRAM button, the clock/timer display changes between the current time and Program Time (starting time and ending time) indications.

Difference between local time and UTC (universal time coordinated) time

The table below shows the difference between the local time and the UTC time in each area. The differences marked with a plus sign (+) indicate the number of hours ahead of the UTC. The differences marked with a minus sign (–) indicate the number of hours behind the UTC. If there is no difference between the local time and the UTC, "+0.0" is indicated.
To see the time difference during the period for daylight saving time or "Summer Time" (if necessary), add one hour to the difference indicated in the table.

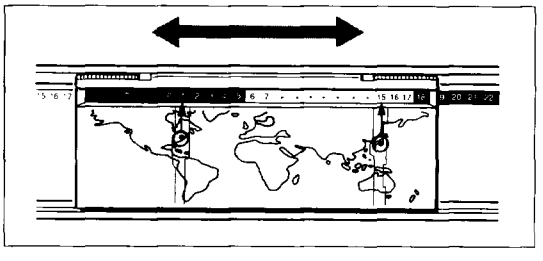
Area	Time difference
Australia	
(Sydney)	+10
(Darwin)	+9 1/2
(Perth)	+8
Austria	+1
Belgium	+1
Brazil	
(Manaos)	–4
(Rio de Janeiro)	–3
Canada	
(Vancouver)	–8
(Calgary)	–7
(Montreal)	–5
Canary Isl.	UTC (+0)
Chile	–4
China (P.R.)	
(Beijing)	+8
Denmark	+1
Ecuador	–5
Egypt	+2
Fiji	+12
Finland	+2
France	+1
Germany	+1
Greece	+2
Hawaii	–10
Hong Kong	+8
India	+5 1/2
Indonesia	
(Jakarta)	+7
Iran	+3 1/2
Italy	+1
Japan	+9
Kenya	+3
Korea (D.P.R.)	+9
Malaysia	+8
Mexico	
(Mexico City)	–6
(Tijuana)	–8
Netherlands	+1
New Zealand	+12
Norway	+1
Pakistan	+5
Panama	–5
Peru	–5
Philippines	+8
Poland	+1
Portugal	UTC (+0)
Saudi Arabia	+3
Singapore	+8
Spain	+1
Sri Lanka	+5 1/2
Sweden	+1
Switzerland	+1
Taiwan	+8
Thailand	+7
United Kingdom	UTC (+0)
USA	
(New York)	–5
(Dallas)	–6
(Denver)	–7
(Los Angeles)	–8
(Anchorage)	–9
USSR	
(Moscow)	+3

*Notes on the time difference from the UTC time

- The UTC (Universal Time Coordinated) time is set according to the time difference and the current local time. Always adjust the local time first and then the time difference. Do not adjust the time difference before adjusting the local time.
- The local time will not change by adjusting the time difference. When you move from one place to another, or when your area enters summer time period, adjust the local time, not the time difference. This way, the time difference will be adjusted automatically.
- The UTC time, local time, and the time difference are related to each other as follows:
  (Time difference) = (Local time) – (UTC time)

How to use the world time scale

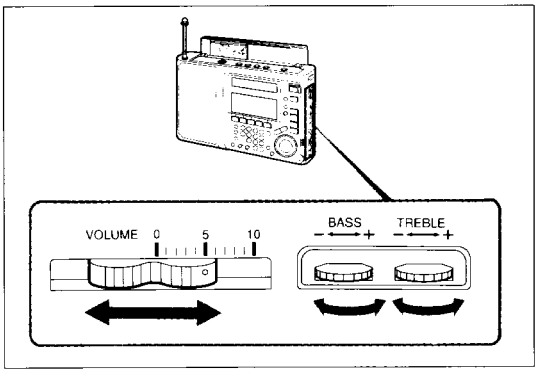
You can check the local time of a desired area by using the world time scale.



Example:
To check the local time in New York when you are in Tokyo
1 Check the current local time in the area you are in. (e.g. 15:00 in Tokyo)
2 Move the scale so that the current time is above the area you are in.
3 Look for the area where you want to know the time. The number above the area shows its local time.

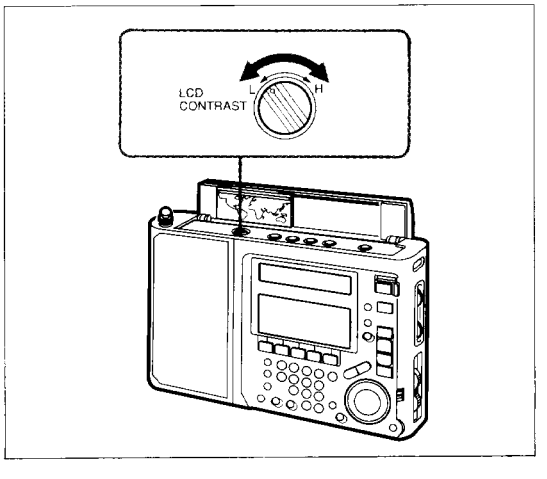
Tips for Better Reception

Volume and Tone Control



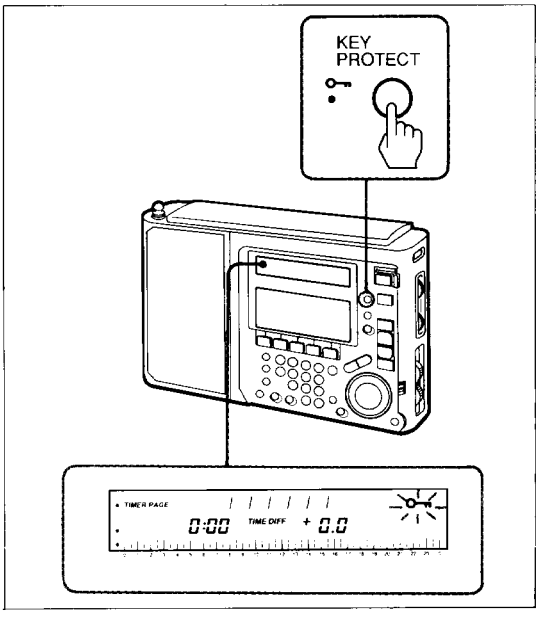
Adjust the volume with the VOLUME control, and the bass and treble with the BASS and TREBLE controls.

Adjusting the Display Contrast



Turn the LCD CONTRAST dial.
For weak contrast, turn towards L.
For sharp contrast, turn towards H.
You can adjust the contrast of the Station Name area, Station selection line, and the Page number display.

Key Protection



Press KEY PROTECT 🔑.
🔑 appears on the clock/timer display. While it is displayed, all the buttons and dial are locked.
This prevents accidental change of the received station.

To release the key protection, press KEY PROTECT 🔑 again.

Preset Station Tuning

Once the frequencies of the stations has been saved, you can tune in these stations easily by using Preset Station Tuning. The saved station can be tuned in by selecting the "Station Name" on each "Preset Page." Each Preset Page can hold up to 5 Stations Names.
There are three kinds of "Preset Pages" in Preset Station Tuning:

- Tuning Pages (1 to 20)
- Quick Pages (Q1 and Q2)
- Timer Page (TP)

How to Tune in by Selecting a Preset Station Name

The **Tuning Pages (1 to 20)** can hold up to 20 Pages, with 5 Station Names on each Page, therefore 100 Station Names in total. One Station Name can hold up to 10 "Frequencies" (see page 15), but in total, 162 Frequencies can be memorized on the Tuning Pages. When you select a Station Name, one of the 10 "Frequencies" is tuned in. The Station Names are displayed in capital letters; e.g. "ABC".

The **Quick Pages (Q1 and Q2)** can hold 2 Pages, with 5 Station Names or 5 frequency numbers on each Page, therefore 10 stations in total.
Quick Pages appear to be very similar to Tuning Pages, but since there are only 2 Pages, you can tune in a station more quickly. Quick Page can memorize a Station Name that you saved on the Tuning Page or any frequency that you tune in. Another difference is that the stations on Quick Pages are memorized by overwriting onto the previously memorized station. (See page 23 for details.) Quick Page is also suitable for temporary use, as a memorandum of a frequency number. The Station Names are displayed in small letters; e.g. "abc."

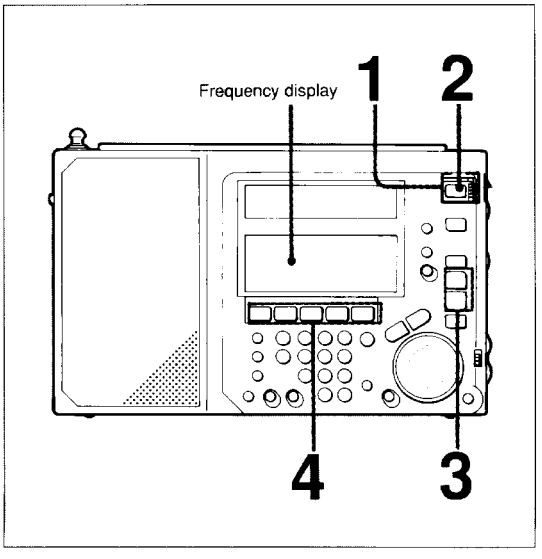
The **Timer Page (TP)** has one Page, therefore 5 Station Names in total. Each Station Name on the Timer Page has only 1 "Frequency." Timer Page can be used to memorize stations for timer operation (turning on and off of the radio at a specified time). The Station Names are displayed in capital letters; e.g. "ABC".

Several stations on the Tuning Page are already preset in this unit at the factory. Therefore, you can tune in a Preset Station by following the instructions on the right before memorizing stations of your own choice. To memorize the stations, go on to the next section to learn how to tune in a station by direct, manual or scan tuning and read the section "Memorizing and Editing Stations" section from page 21.

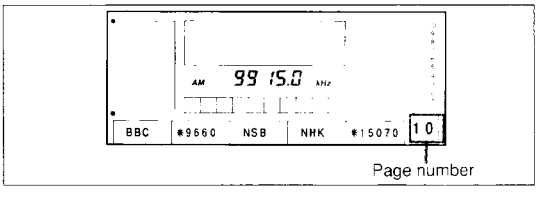
Notes

- The stations on the Quick Page and the Timer Page are not preset at the factory. Read the section from page 21 and save the stations you want for more details.
- Refer to the supplied "Wave Handbook" for details about the factory-preset stations.

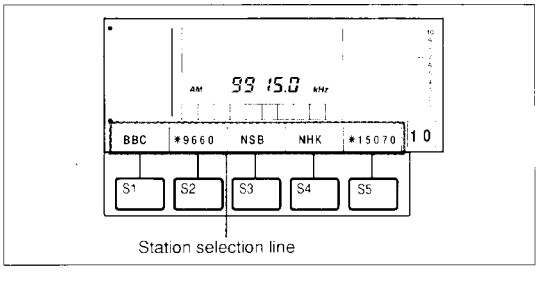
To receive a preset station on a Tuning Page



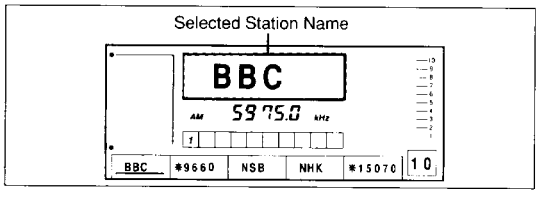
1 Set POWER/LOCK to POWER.
2 Press ON/OFF.
The indications on the frequency display appear.
3 Press PAGE FEED + ⇧ or – ⇩ to select the desired Page number (from 1 to 20)*.
Each time you press + or –, the page number changes.



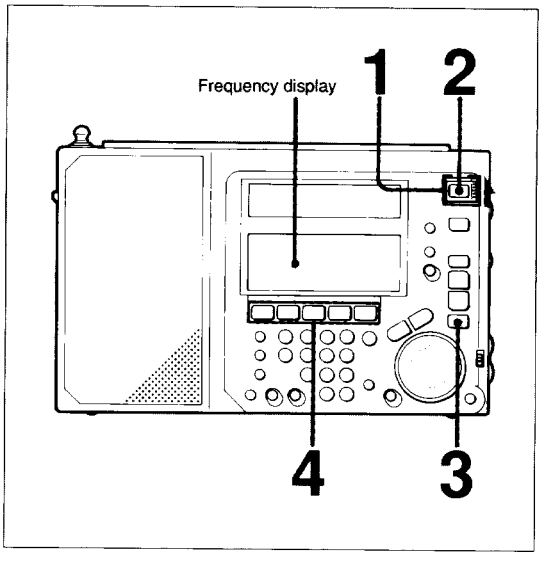
4 Select the the desired station from the 5 Station Names on the Station selection line, and press the Station Number button (S1, S2, S3, S4, or S5) for that Station Name.



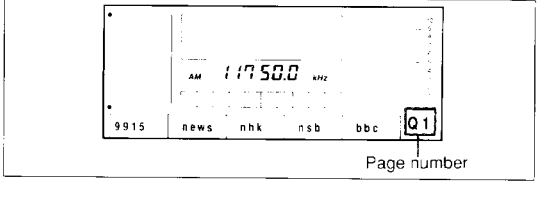
The selected station is tuned in and the Station Name appears on the display.
To select a Frequency, refer to page 15.



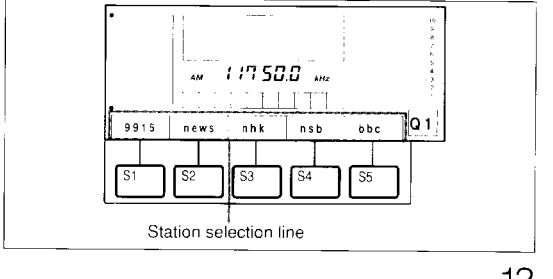
To receive a preset station on a Quick Page



1 Set POWER/LOCK to POWER.
2 Press ON/OFF.
The indications on the frequency display appear.
3 Press QUICK PAGE to select the desired Quick Page, Q1 or Q2.
Each time you press it, the Page number changes as follows:
Q1 → Q2 → Tuning Page



4 Select the the desired station from the 5 Station Names (or frequencies) on the Station selection line, and press the Station Number button (S1, S2, S3, S4, or S5) for that station.



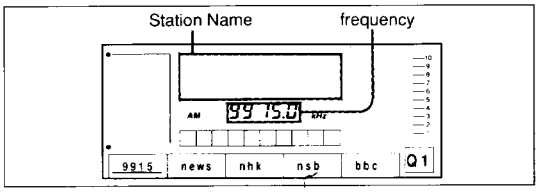
*Note on the Page number

When you memorize Station Names on all the 20 Tuning Pages, all the Page numbers are shown when you press the PAGE FEED buttons. Otherwise, not all the Tuning Pages are displayed.
The Page that has no Station Names is called a "Blank Page." When you select from the Tuning Pages, only the numbers for Pages with preset stations and one "Blank Page" number (with the smallest Page number) is displayed. The other Blank pages will not be displayed.
Only the first "Blank Page" number is displayed so that you can save a new Station Name on that page.

Example: When Pages 1 to 10 are "Blank Pages" and Pages 11 to 20 have Preset Station Names, only Page Numbers 1 and 11 to 20 are displayed when you press the PAGE FEED buttons.

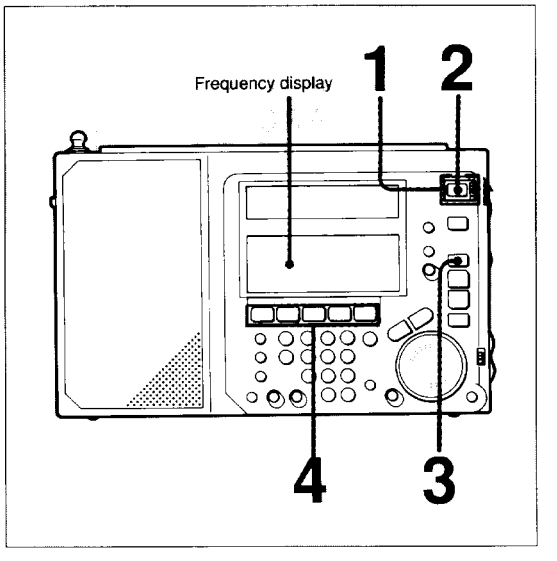
However, during the Program Time Mode when memorizing stations (see page 22), all the 20 Pages are displayed when you press the PAGE FEED buttons.

The selected station is tuned in.
The Station Name appears if it has one. (See page 23 for details.)

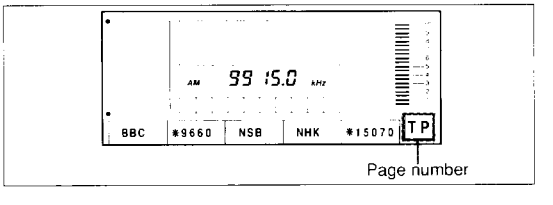


Note
When the unit is shipped from the factory or when you remove the batteries for a long time, the settings for the Quick Page are erased .

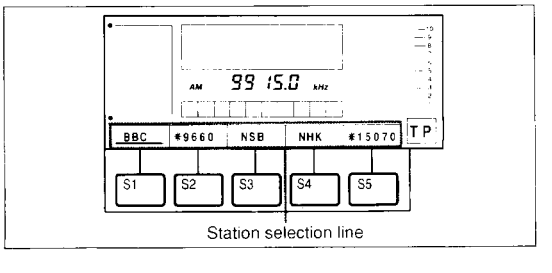
To receive a preset station on the Timer Page



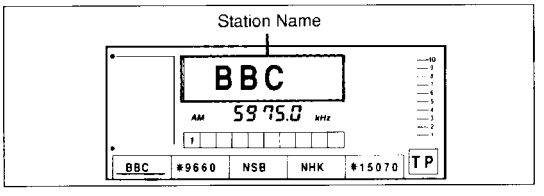
1 Set POWER/LOCK to POWER.
2 Press ON/OFF.
The indications on the frequency display appear.
3 Press TIMER PAGE so that "TP" appears for the Page number.



4 Select the the desired station from the 5 Station Names on the Station selection line, and press the Station Number button (S1, S2, S3, S4, or S5) for that Station Name.



The selected station is tuned in and the Station Name appears on the display.



How to Select a Preset Frequency under a single Station Name

Another important characteristic of the Preset Station Tuning is that you can save up to 10 kinds of "Frequencies" under one Station Name. Each "Frequency" can hold the following types of data:

- band and frequency of the broadcast
- AM detection mode
- Program Time (broadcasting time or any desired time).

Note
The Timer Page can hold only one Frequency.

Memorizing **Program Time** for each Frequency enables the following:

- The "ON AIR" indication (page 16) tells you whether it is the broadcasting time for the station or the program.
- The unit automatically selects the most appropriate station to tune in among the 10 Frequencies.

Saving two or more Frequencies with different Program Times under one Station Name is useful especially for SW reception. The receiving condition of SW broadcast varies depending on the season, time, and frequency. The same programs are broadcasted at the same time using different frequencies so that the listeners can choose the frequency with the best receiving condition. The "best" frequency varies depending on the area and the time.

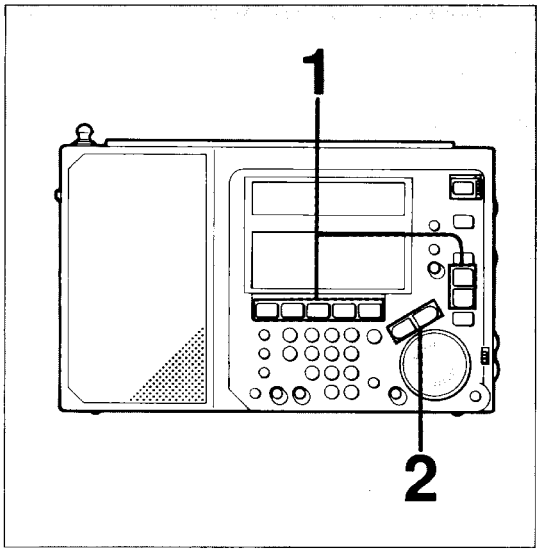
For example, NSB has two frequencies; 3925 kHz, and 6055 kHz. Let's suppose that in a certain area, 3925 kHz is received clearly in the morning, but in the afternoon, 6055 kHz is received better. In this case, you can memorize two "Frequencies" with different Program Times and frequencies in one "Station Name."

You can program each Frequency with starting time and ending time. However, you cannot turn the power of the radio on and off by programming this time duration unless that Station is on the TIMER PAGE and you set the timer (page 27).

Note
When this unit is shipped from the factory, the Timer Page is not preset with Station Names. Refer to page 21 for memorizing stations.

Since you can label the Station Name with any name, you can save 10 different stations of the same category and name them "MUSIC", for example. This way, you can find a station more quickly if you know what type of broadcast you want to listen to.

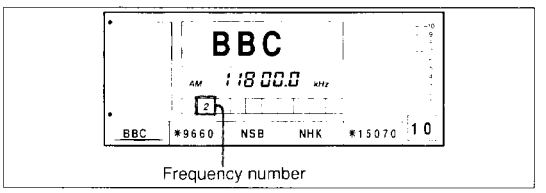
To select a "Frequency"



1 Receive a preset station by selecting a Station Name (see page 12).

   If a Station Name holds two or more "Frequencies", all the Frequency numbers appear for one second when you select that Station Name. Then the appropriate "Frequency"* is selected automatically and only one Frequency number remains.

2 If the desired "Frequency" number is not selected, press MEMORY FREQ/METER BAND STEP/CURSOR ⇦ ⇨ to select the desired Frequency.



Frequency number

How the appropriate Frequency is selected

The unit automatically selects one Frequency if there are two or more Frequencies in one Station Name.

If the current time is within the Program Time of one Frequency, that Frequency is selected and the "ON AIR" indication appears. If the current time is not within the Program Time of any Frequencies, the Frequency to be selected is one of the following:

- the Frequency whose Program Time is the nearest to the current time (if "Program Time" is memorized in all the Frequencies under that Station Name)
- the Frequency which was selected the last time (if there is a Frequency without Program Time).

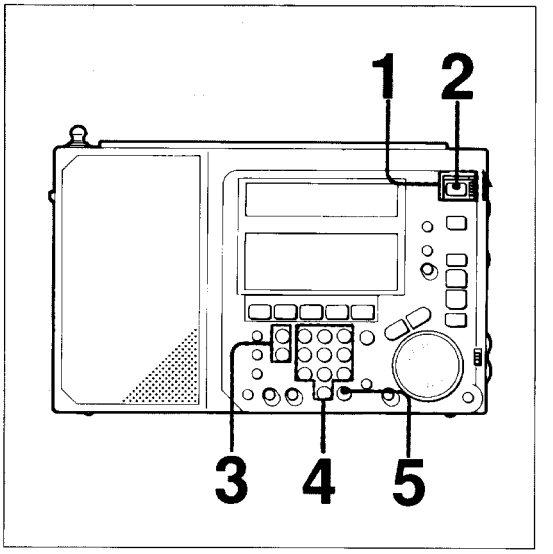
Note

If you want the unit to select the Frequency according to its Program Time, make sure that the clock is set correctly.

Direct Tuning

If you know the frequency of a station to be received, you can tune in the station easily by direct tuning.

How to Tune In a Station Directly



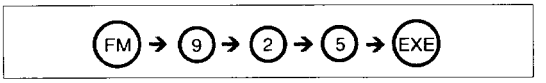
1 Set POWER/LOCK to POWER.
2 Press ON/OFF.
   The indications on the frequency display appear.
3 Select the desired band by pressing FM or AM.
   For AM (SW, MW, or LW) reception, select the required AM mode (See page 18.)
4 Input the frequency of the desired station by pressing DIRECT TUNE/TIME INPUT numeric buttons.
5 Press EXE.

How to input a frequency

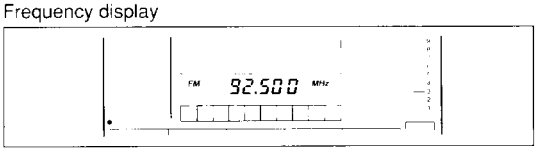
Example 1: AM 1,242 kHz
Press

Frequency display

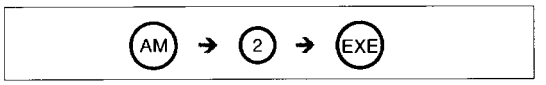
Example 2: FM 92.5 MHz
Press



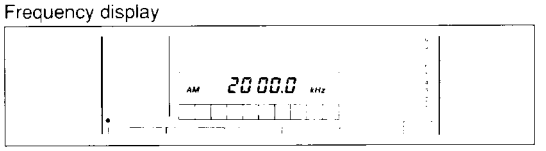
Frequency display



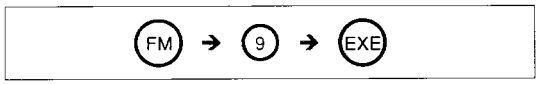
To input a frequency whose right-hand digits are all 0
Example 3: AM 2,000 kHz



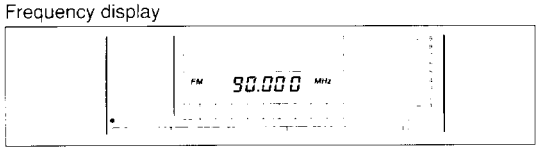
Frequency display



Example 4: FM 90.00 MHz



Frequency display



In case of 10,000 kHz and 20,000 kHz, however, press "1", "0", "EXE", and "2", "0", "EXE", respectively.
In case of 200 kHz, 300 kHz, ... 900 kHz, press "2", "0", "0", "EXE"; "3", "0", "0", "EXE", etc.

- After pressing a key, press the next key within 10 seconds. If you do not, the previous station returns.
- With direct tuning, the frequency is displayed in increments of the following intervals, depending on the bands:
  AM: 1 kHz
  FM: 0.05 MHz

If you input a frequency between intervals, the frequency at the interval just below is tuned in and displayed.
For example, if you input FM 92.549 MHz, FM 92.500 MHz is tuned in and displayed.

If the "TRY AGAIN" indication appears
If you input a frequency outside the frequency range, "TRY AGAIN" appears on the display three times. Then the frequency indication goes back to the previously received frequency .

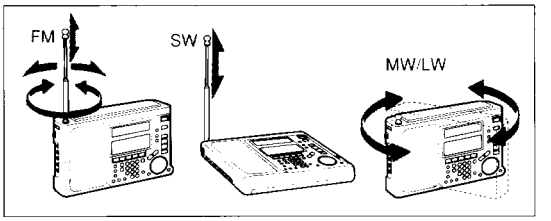
To Improve Receiving Conditions

Adjust the antenna as illustrated.

For FM reception
Pull out the telescopic antenna to expose its swivel base and adjust its length, angle and direction.

For SW reception
Pull out the telescopic antenna to its full length and set it vertically.
Note: If there is a fluorescent lamp just above the radio and the reception is noisy, incline and shorten the telescopic antenna.

For MW/LW reception
Retract the telescopic antenna. The built-in ferrite bar antenna activates. Since this antenna is directional, rotate the unit horizontally for optimum direction.



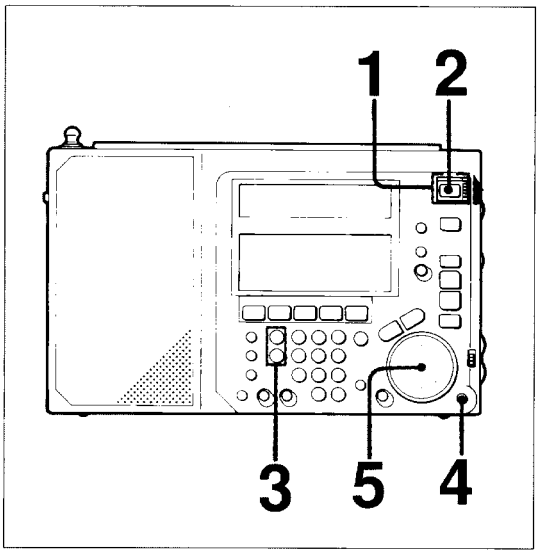
Notes

- If reception is unsatisfactory with the telescopic antenna or the built-in ferrite bar antenna, connect an external antenna. See page 29 for the details.
- In vehicles or buildings, radio reception may be difficult or noisy. Try listening near the window.
- If the received sound is distorted or noisy, adjust the antenna carefully. For AM reception, set the SENS switch to LOCAL.

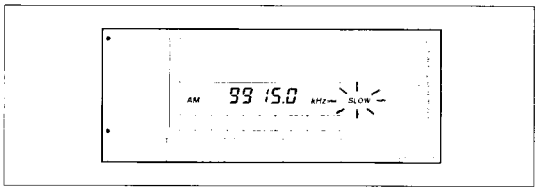
Manual Tuning

Use manual tuning when you do not know the frequency of the station you want to tune in, or when you want to tune in a station more precisely after scan tuning (page 20).

How to Tune In a Station Manually



1 Set POWER/LOCK to POWER.
2 Press ON/OFF.
The indications on the frequency display appear.
3 Select the desired band by pressing FM or AM.
For AM (SW, MW, or LW) reception, select the required AM mode (See the next section.)
4 For AM reception, select the tuning interval (fast or slow) by pressing FAST/SLOW.
Each time you press it, the tuning interval changes alternately.
FAST (no indication): 1 kHz ↔ SLOW: 50 Hz



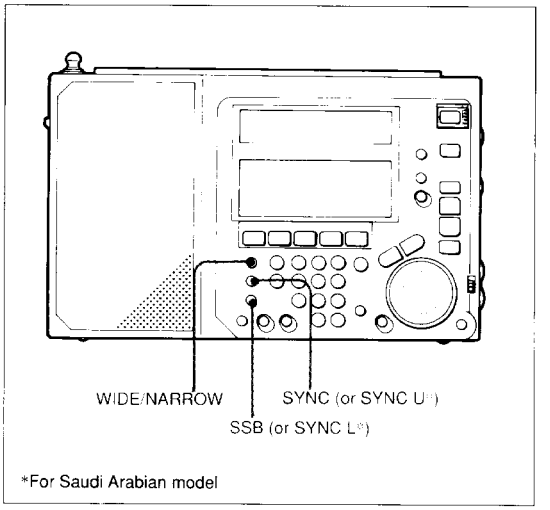
5 Turn the DIAL TUNE/JOG dial to tune in a desired station.
Turn the dial clockwise for higher frequencies and counterclockwise for lower frequencies.

Note
When you select "SLOW", the tuning interval will be 50 Hz, but the frequency is displayed in 100 Hz step.

Notes:
- When the upper or lower limit of the band frequency (FM or AM) is reached, the frequency no longer changes even if you turn the DIAL TUNE/JOG dial further.
- For AM (LW, MW, and SW) reception in SYNC U,SYNC L, USB, or LSB/CW, be sure to set the tuning interval to SLOW and turn the DIAL TUNE/JOG dial slowly.
- When the DIAL LOCK switch is set to the direction of the arrow, you cannot change the frequency by turning DIAL TUNE/JOG.

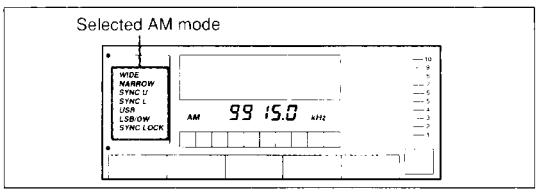
How to Select the AM Mode

Select the appropriate AM mode according to the broadcast receiving conditions.



*For Saudi Arabian model

Press the MODE buttons.
Saudi Arabian model: WIDE/NARROW, SYNC U, and SYNC L.
Models for other countries: WIDE/NARROW, SYNC, and SSB.
The selected AM mode appears on the frequency display.



To change the selectivity

Press WIDE/NARROW and display WIDE or NARROW.
WIDE: Normally set to this mode for wider selectivity.
NARROW: If reception is interrupted or noisy, set to this mode for narrower selectivity. Reception will be improved.

To activate the synchronous detection-1

For Saudi Arabian model:
Press SYNC U or SYNC L and display SYNC U or SYNC L.
For models for other countries:
Press SYNC and display SYNC U or SYNC L.

Select either SYNC U or SYNC L which best reduces signal interference or distortion due to fading 2.

If neither of the two is effective or if the sound gets worse, press SYNC again to cancel this mode. The SYNC indication disappears.

When you select SYNC U or SYNC L
The SYNC LOCK indication appears on the display. If this indication does not appear, it shows that the synchronous detection cannot be performed because the signal is too weak.

To activate the SSB (Single Side Band) mode (except for Saudi Arabian model)

Press SSB and display USB or LSB/CW.
USB: For USB (Upper Side Band) reception.
LSB/CW: For LSB (Lower Side Band) or CW (International Morse Code) reception.

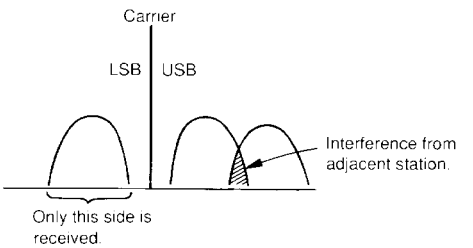
About SSB (Single Side Band) and CW (Continuous Wave)
SSB is very popular among ham and business radio and will be found on all of the amateur bands because of its signal intelligibility. This results from that it transmits signals with half bandwidth of DSB (Double Side Band).
In general, SSB transmissions up to 10 MHz employs LSB modulation, and those above this frequency uses USB.
CW is also popular among ham and business radio. In CW transmission, the amplitude of a carrier is not modulated while that of other system is modulated. CW conveys information by interrupting a carrier using Morse code. It can be heard as a beat sound only with the unit equipped with the BFO circuits. To understand the information transmitted by CW, you need to learn the Morse code.

1 **Synchronous detection** extracts one side band free from interference out of the DSB signals. The circuit takes the carrier wave out of the signals, and provides them with the synthesized signal of exactly the same frequency and phase.

2 **Fading** is a phenomenon in which the sound gets louder and lower in turn. It occurs because the signal from the station arrives by two or more different paths.

What is synchronous detection?

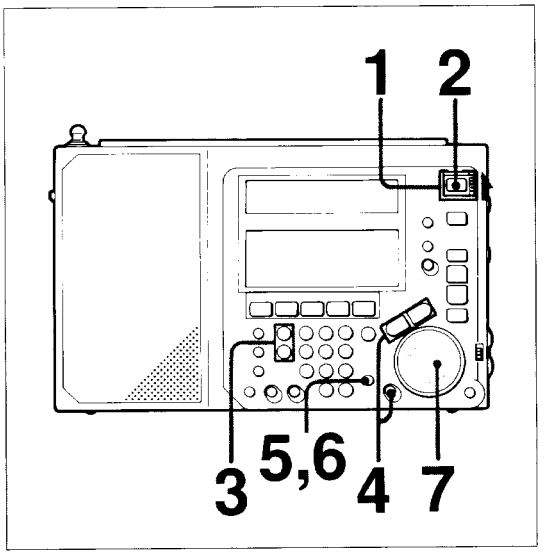
There are two big problems in AM reception: distortion due to fading and interference from adjacent stations. The synchronous detection is effective in solving these problems. Distortion due to fading is caused by over-modulation, which occurs when a carrier component of the received signal is attenuated on the way. In this receiver, a pure carrier frequency with no level variation, perfectly synchronized with the original carrier, is generated in the synchronous detector circuit and is mixed with the received signal to compensate the attenuated carrier component. In this way, distortion is remarkably reduced.
On the other hand, AM (LW, MW, and SW) broadcasting generally uses double-sideband transmission, in which modulated signals are transmitted using both the upper and lower sidebands (USB and LSB). In most cases, one of the sidebands is affected by interference from adjacent stations (beats). In the synchronous detector circuit, one of USB and LSB can be received. This allows clear reception without interference from adjacent stations.



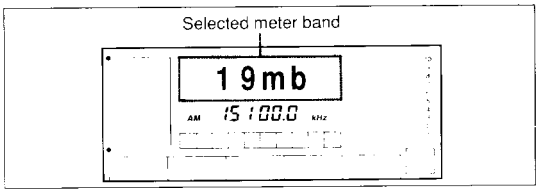
Scan Tuning

Use scan tuning to automatically scan the stations in the frequency range of a broadcast band.

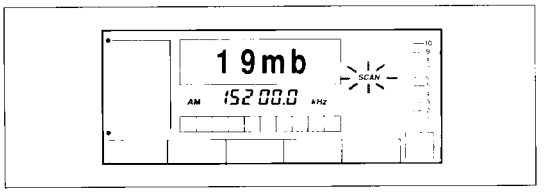
How to Scan the Stations



1 Set POWER/LOCK to POWER.
2 Press ON/OFF.
The indications on the frequency display appear.
3 Select the desired band by pressing FM or AM.
4 While keeping METER BAND depressed, press MEMORY FREQ/METER BAND STEP/CURSOR ⇦ ⇨ and select the meter band. (Refer to the table on the right.)



5 Press SCAN/AUTO TUNE.
"SCAN" indication appears.
Within the frequency range of the selected meter band, scan tuning begins and stops automatically for 2 seconds each time a station is received.



6 Press SCAN/AUTO TUNE again when the desired station is tuned in.
7 Tune in more precisely with the DIAL TUNE/JOG dial if necessary.

The frequency range and tuning interval of each broadcast band

Broadcast band	Meter band (display)	Frequency to be scanned	Scanning intervals
LW	LW	150 – 285 kHz (For Italy and Saudi Arabia) 150 – 528 kHz (For other countries)	3 kHz
MW	MW	531 – 1,602 kHz or 540 – 1,600 kHz *1	9 kHz or 10 kHz *1
SW1 *2	120 mb	2,300 – 2495 kHz	5 kHz
SW2 *2	90 mb	3,200 – 3,400 kHz	5 kHz
SW3	75 mb	3,900 – 4,000 kHz	5 kHz
SW4	60 mb	4,750 – 5,060 kHz	5 kHz
SW5	49 mb	5,950 – 6,200 kHz	5 kHz
SW6	41 mb	7,100 – 7,300 kHz	5 kHz
SW7	31 mb	9,500 – 9,900 kHz	5 kHz
SW8	25 mb	11,650 – 12,050 kHz	5 kHz
SW9	21 mb	13,600 – 13,800 kHz	5 kHz
SW10	19 mb	15,100 – 15,600 kHz	5 kHz
SW11	16 mb	17,550 – 17,900 kHz	5 kHz
SW12	13 mb	21,450 – 21,850 kHz	5 kHz
SW13	11 mb	25,670 – 26,100 kHz	5 kHz
FM	FM	87.5 – 108.0 MHz (For Germany, Italy, Scandinavian countries, Austria and Saudi Arabia) 76.0 – 108 MHz (For other countries)	50 kHz

*1 9 kHz or 10 kHz depending on the MW channel step setting (see page 7.)
*2 Except for Italian models

When scanning stops too often
Set SENS to LOCAL.

Memorizing and Editing Stations

This section describes how to save stations and "edit" (add, erase, or program) them for Preset Station Tuning. Several stations on the Tuning Page are already memorized when this unit was shipped from the factory. To see the difference among Tuning Page, Quick Page, and Timer Page, and for more details, refer to the "Preset Station Tuning" section (page 12.)

How to Memorize a Station on the Tuning Page and the Timer Page

You can save some or all of the following data under a Preset Station on the Tuning and the Timer Page:

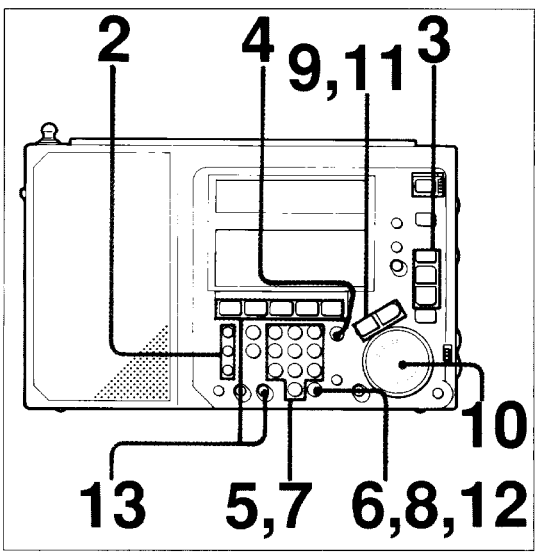
- Station Name
- band and frequency of the broadcast
- AM detection mode
- Program Time (starting time and ending time)

If you do not want to program some kinds of the above data, skip the procedures as indicated in the instructions.

Notes on the Timer Page:

- The preset stations memorized on the Timer Page can be used as the programs for timer operation (see page 27.)
- The Program Time for the Timer Page is up to 120 minutes.

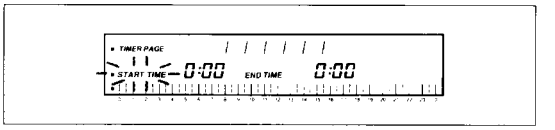
To memorize a Station



1 Tune in the desired station using manual, direct, or scan tuning. (See pages 16, 18, 20.)
2 For AM, select the desired AM mode. (See page 18.)
3 Select the desired Page to be memorized.
For Tuning Pages, press PAGE FEED + ⇧ or – ⇩ and display the desired Page number.
For Timer Page, press TIMER PAGE and display "TP."

If you do not want to program the Program Time nor the Station Name, go to step 13.

4 Press EDIT.
"START TIME" on the clock/timer display flashes. (The system enters the Program Time Mode.)

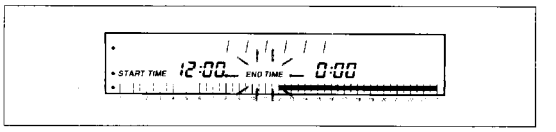


If you do not want to program the Program Time, go to step 9.

5 Input the starting time* by pressing the DIRECT TUNE/TIME INPUT numeric buttons.

Example: To input "12:00".
Press "1," "2", "0", "0".

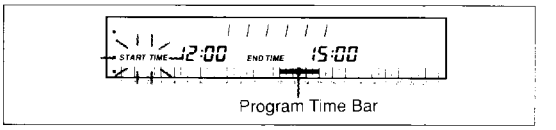
6 Press EXE.
"END TIME" flashes.



7 Input the ending time* by pressing the DIRECT TUNE/TIME INPUT numeric buttons.

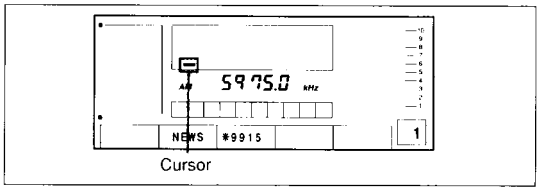
Example: To input "15:00"
Press "1", "5", "0", "0".

8 Press EXE.
"START TIME" flashes again.
The Program Time duration is indicated by the Program Time Bar.



If you do not want to program the Station Name, go to step 13.

9 Press MEMORY FREQ/METER BAND STEP/CURSOR ⇦ or ⇨ button.
A cursor appears under one letter of the Station Name on the frequency display. (The unit enters the Station Name Editing Mode.)



10 Turn the DIAL TUNE/JOG dial to select the desired character for the first letter of the Station Name.
11 Press MEMORY FREQ/METER BAND STEP/CURSOR ⇨ button.
The cursor moves to the next letter.

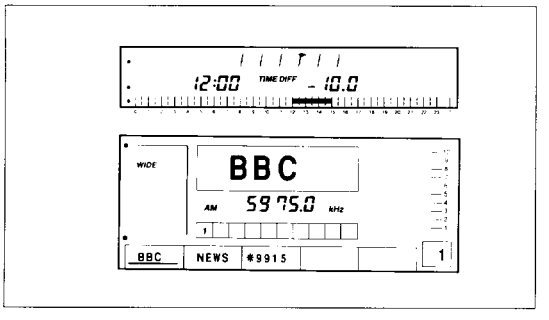
Repeat steps 10 and 11 to make the desired Station Name.

12 Press EXE.
13 While keeping ENTER depressed, press the desired station
number; S1, S2, S3, S4, or S5.

The memorized Station Name appears above the memorized station number on the Station Selection Line on the Frequency display.

(The unit goes back to the Tuning Mode.)

Example
The display will look like the illustration below if you have programmed the following data:
frequency: AM, 5975.0 kHz
starting time: 12:00
ending time: 15:00
AM mode: Wide
Station Name: BBC
Page and number: Tuning Page 1, Station number S1



About the starting time and ending time
- Input either the local time or the UTC time depending on the clock indication. If the UTC indication is displayed, input the UTC time, and if not, input the local time. Once the Program Time is memorized, if you change the clock indication by pressing LOCAL/UTC, the Program Time indication and Program Time bar changes also according to the time difference.
- You do not have to input a "0" for time such as "0:10". Just input "1" and "0".

About the Program Time Mode, the Station Name Editing Mode, and the Tuning Mode
This unit has three modes: Program Time Mode, Station Name Editing Mode, and Tuning Mode.
In the Program Time Mode, you can input the starting and ending time.
In the Station Name Editing Mode, you can make a Station Name.
The Tuning Mode is the normal state in which you can tune in a station.
When you press ENTER and S1-S5 and memorize a Station or a Frequency, the unit goes back to the Tuning Mode.

To exit the Program Time Mode or Station Name Editing Mode and go back to the Tuning Mode, press FM, AM, or S1-S5.
To exit the Station Name Editing Mode and go back to the Program Time Mode, press EXE.

How to make a Station Name

You can use up to 6 characters to make a Station Name. The letters and symbols you can use are the following (53 kinds of characters and a blank space):

	A	B	C	D	E	F	G	H	I	J	K	L	M
?	@	:	;	=	_	%	&	'	(	)	*	+	.

N	O	P	Q	R	S	T	U	V	W	X	Y	Z
-	.	/	0	1	2	3	4	5	6	7	8	9

As you turn the DIAL TUNE/JOG dial clockwise, the letter changes in the above order. If you turn it counterclockwise, it changes in the opposite order. Turn the dial until the desired letter appears on the display.

Note: Make sure that the DIAL LOCK switch is not locked.

To delete a letter, press PAGE FEED – ⇧.
To insert a space, press PAGE FEED + ⇩.

If you memorize a station that does not have a Station Name onto a blank station, a Station Name is given automatically. The symbol "*" and the frequency number appear on the Station Name Area and on the Station Selection Line.
Example:
FM 98.0 MHz is memorized as "*98.0".
AM 15360 kHz is memorized as "*15360".

Notes on Tuning Pages:
- If the station has a new Station Name, you cannot memorize it on a station number that already has a Preset Station Name. You can memorize it only on a blank station.
- If the station does not have a new Station Name, you can either memorize it on a blank station or add it to an already memorized Preset Station Name. (See page 25 for details.)
- You cannot overwrite a station on the Tuning Page except for the following cases. If you want to erase a station, see page 24.

- You can overwrite a new station onto a previously memorized station if:
  - The previously saved station does not have a Program Time, but the new station with the same Station Name and frequency number has a Program Time.
  - The previously saved station has a Program Time, but the new station with the same Station Name and frequency does not have a Program Time.
- You can eliminate the Program Time from that station by inputting the same time for both the starting time and ending time also.
- When you press the ENTER button in step 13, the underline on the Station selection line of the Tuning Page flash to let you know which station numbers can be memorized on.

Notes on Timer Page:

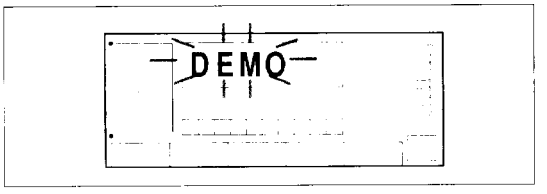
- If you memorize a station on the number where a station has already been memorized, the previous station is be erased and replaced by the new one.
- If you memorize a station without Station Name on a previously memorized station, the Station Name does not change but the programmed data is replaced by the new data.
- Each station on the Timer Page can have only one Frequency.

Demonstration mode

This unit has a demonstration mode in which all the preset stations in the Tuning Pages are tuned in for 3 seconds each sequentially.

Press FREE while keeping METER BAND depressed.

"DEMO START" is displayed and the demonstration mode starts from the first Page.



About the key words

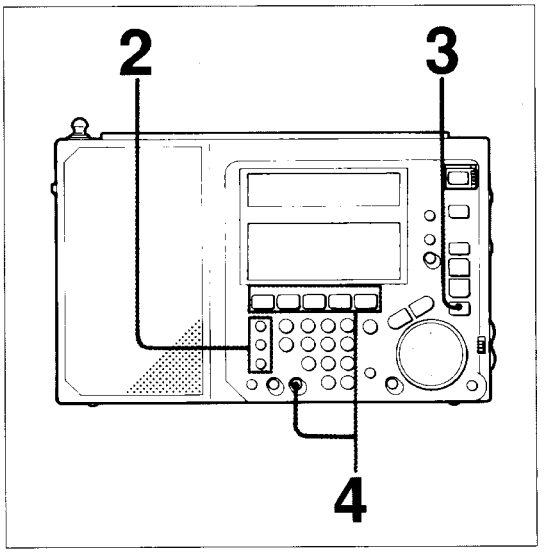
You can memorize the following "key words" for the demonstration mode:
"GOTOnn" which means "go to Page nn."
"RETURN" which means "return to Page 1."
Input these key words as the Station Names for the Preset Station using the same procedure as for making the Station Names on page 21.
These Station Names work as key words only in the demonstration mode.

To Memorize a Station on the Quick Page

You can memorize one of the following two data in a Preset Station on the Quick Page:

- Station Name (of the Station on the Tuning Page)
- band and frequency of the broadcast and AM detection mode

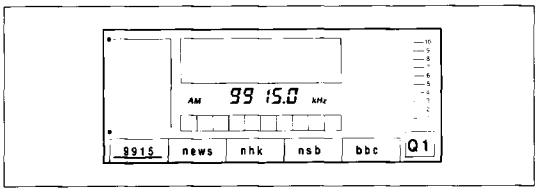
To memorize a station



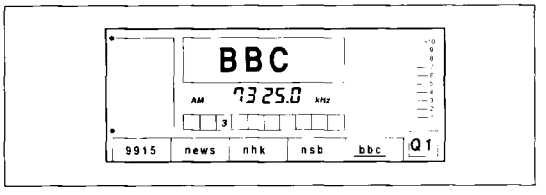
1 Tune in the desired station by manual, direct, scan or Preset Station tuning.
2 For AM, select the AM mode. (See page 18.)
3 Select Q1 or Q2 by pressing QUICK PAGE.
4 While keeping ENTER depressed, press the desired station number: S1, S2, S3, S4, or S5.

The memorized Station Name or frequency appears on the Station Selection Line. The Station Name will be displayed in small letters.
If you tune in a station using manual, direct, or scan tuning, the frequency appears on the Station Selection Line, and the Station Name Area remains blank.

Example 1
If you memorize a station using manual, direct or scan tuning:



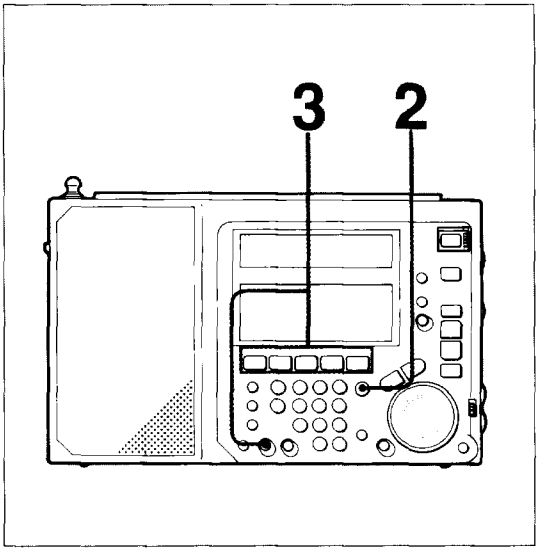
Example 2
If you memorize a station using Preset Station Tuning:



Note
If you memorize a station on the Station number, the previous station is erased and replaced by the new one.

How to Erase a Frequency or a Station

You can erase a Station on the Tuning Page and Timer Page by following the procedures below. For the Tuning Page, you can erase a Frequency.



1 Tune in the Preset Station to be erased. Select the Frequency also if necessary. (See pages 12, 14, 16)
2 Press EDIT.
3 While keeping TIMER CHECK/ERASE depressed, press the Station number to be erased: S1, S2, S3, S4, or S5.

The Frequency that you tuned in in step 1 is erased.
If the Station Name has only one Frequency, that station becomes a "Blank" station.
If the Station Name has more than two Frequencies, only the tuned Frequency is erased and the rest remains. The Station Name remains also.

If you want to erase all the Frequencies in the Station Name
Repeat step 3.
When all the Frequencies are erased, the Station Name disappears.

If there is a Preset Station with the same Station Name
After the Preset Station is erased, other Station with the same name is tuned in so that it can be erased if you want to.

About the beep sound
A beep sound is heard when you press TIMER CHECK/ERASE to warn you that the Station or Frequency will be erased.

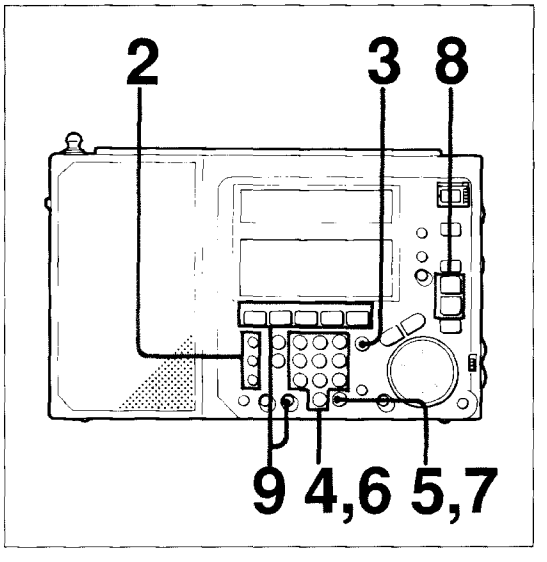
How to Add a Frequency

You can memorize up to 10 Frequencies under each Station Name on the Tuning Page. The Frequencies can hold some or all of the following data:

- band and frequency of the broadcast
- AM detection mode
- Program Time (starting time and ending time)

The Station Name will be the same one as the previously memorized station.

You can save up to 162 Frequencies in total on the Tuning Pages.



1 Tune in the desired station.
2 For AM, select the desired AM mode.

If you do not want to program the Program Time, go to step 8.

3 Press EDIT.
"START TIME" flashes.

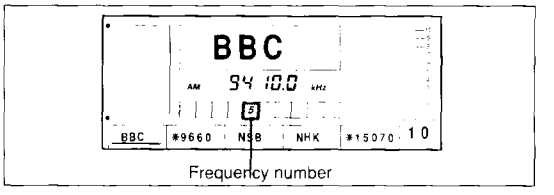
4 Input the starting time by pressing DIRECT TUNE/TIME INPUT numeric buttons. (See page 21.)
5 Press EXE.
"END TIME" flashes.
6 Input the ending time by pressing DIRECT TUNE/TIME INPUT numeric buttons. (See page 21.)
7 Press EXE.
"START TIME" flashes again.

The Program Time duration is indicated by the Program Time Bar on the clock/timer display.

8 Select the Page that has the Station Name to be added to by pressing PAGE FEED + ⇧ or − ⇩.

9 While keeping ENTER depressed, press the desired station number; S1, S2, S3, S4, or S5.

The station is added as a new Frequency and will have a Frequency number for it. (The new Frequency will be added next to the Frequency number which was tuned in last time under that Station.)

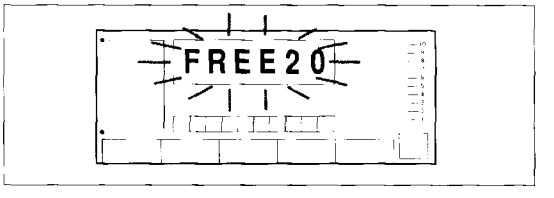


Note

If you make a new Station Name, you cannot add it as a Frequency; it is memorized as a new Station.

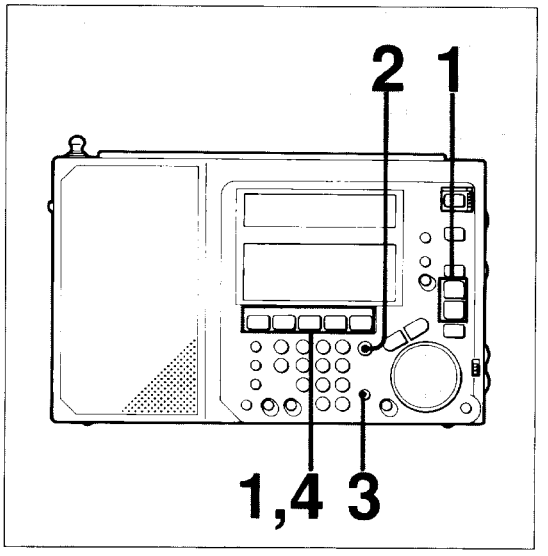
To see how many more Frequencies can be memorized

Press FREE.
"FREE" and the number of Frequencies that you can save is displayed on the Station Name Area.
Example:
When you can save 20 more Frequencies, "FREE 20" appears on the display.



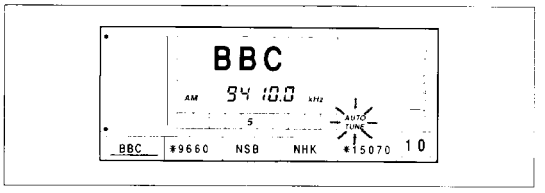
Press FREE again to go back to Station Name display.

To tune in all the Frequencies under the Station Name — Auto tune



1 Tune in the desired Preset Station.
2 Press EDIT.
3 Press SCAN/AUTO TUNE to display AUTO TUNE.
The Auto Tune mode is memorized.
4 Press the station number (S1, S2, S3, S4, or S5) for that Station Name on that station.

The Auto Tune function is activated. "AUTO TUNE" displays and all the Frequencies are tuned in sequentially for a second. Then, the Frequency with the strongest signal strength is tuned in.



Once the Auto Tune mode is memorized, the Auto Tune function activates each time you select that Station Name by Preset Station Tuning (Tuning Page or Quick Page).

To cancel the Auto Tune mode

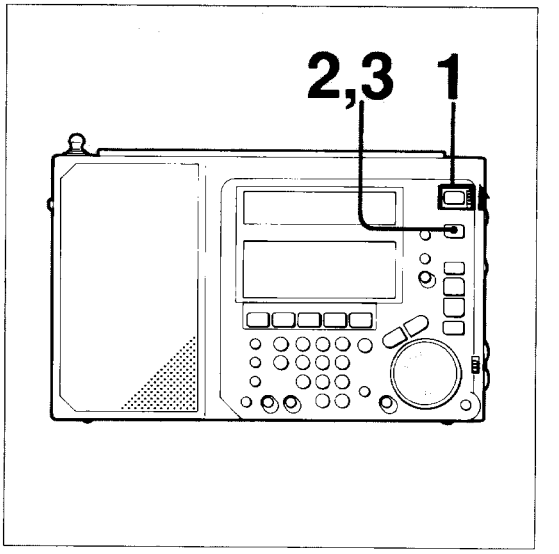
Follow the same procedure as above. When you press SCAN/AUTO TUNE again in step 3, the AUTO TUNE indication disappears.

Note

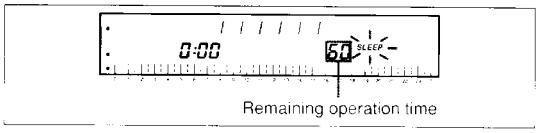
You can memorize and cancel the Auto Tune mode only on Station Names on the Tuning Page. However, once you memorize the Auto Tune mode on a Station, the Auto Tune function works also when you tune in the same Station Name on a Quick Page.

Sleep Timer Operation

You can make the radio turn off automatically after 15, 30, or 60 minutes by the sleep timer.



1 Set POWER/LOCK to POWER.
2 Press SLEEP.
The power turns on.
3 Select the sleep timer time by pressing SLEEP.
Each time you press it, the display changes to "60", "30", and "15". When you press it again, the power turns off.



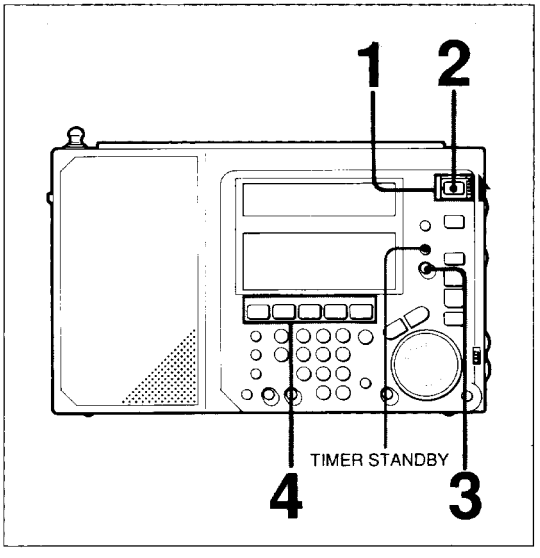
4 Tune in the desired station.

The remaining operation time is displayed as the time elapses.
The radio will be turned off automatically at the preset time.

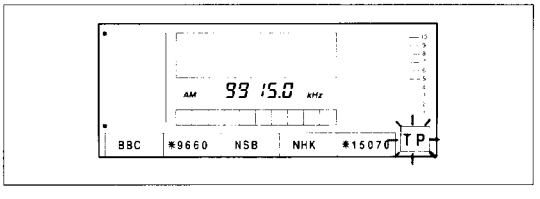
How to Set the Timer

You can set up to 5 different programs for timer operation. The programs are those saved on the Timer Page. (See page 12.) Timer operation can be activated either when the power is turned off or when you are listening to another station.

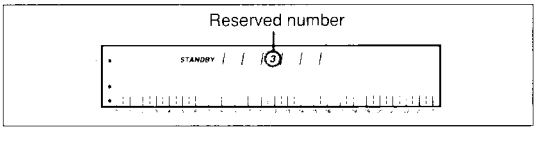
Before setting the timer, make sure that the desired stations and Program Time have been saved on the Timer Page. If not, see page 21 and memorize them.



1 Set POWER/LOCK to POWER.
2 Press ON/OFF.
3 Press and hold RESERVE and display "TP" to select Timer Page.



4 While keeping RESERVE depressed, press the desired Station number (S1, S2, S3, S4, or S5).
STANDBY and the reserved number appears on the clock/timer display.

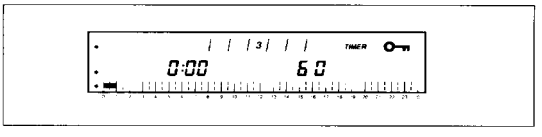


5 Repeat step 4 if you want to set the other four timers.
6 Turn off the power by pressing ON/OFF or tune in another station.

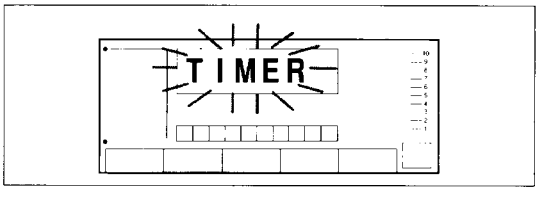
Note: The timer does not operate if you set POWER/LOCK to LOCK.

When starting time comes, the radio turns on and tunes in the programmed station. If you are listening to another station, the station changes automatically to the programmed station. The remaining time until the ending time is displayed as the time elapses.
When the ending time comes, the radio will be turned off automatically or tunes in the station that you were listening to before the timer was activated.

While the timer is activated, the TIMER and 🔑 (key protect) indication appears on the clock/timer display. All the buttons are locked. To release the key protect, press KEY PROTECT 🔑.



About the error message
When you press any button while TIMER 🔑 is displayed, "TIMER" appears on the Station Name Area three times to let you know that timer operation is activated.



To cancel the timer

Press TIMER STANDBY.
The reservation for all the timer programs is canceled.
When you press TIMER STANDBY again, all the timer programs are set again. (Only while POWER/LOCK is set to POWER.)

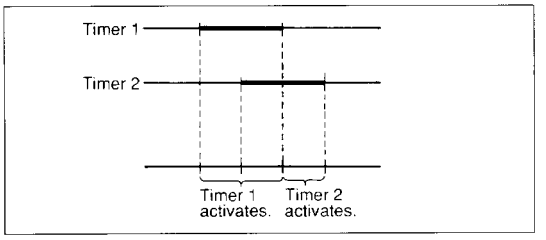
To cancel the reservation of each timer program

While keeping RESERVE depressed, press the desired Station number. Only the pressed number disappears from the display.

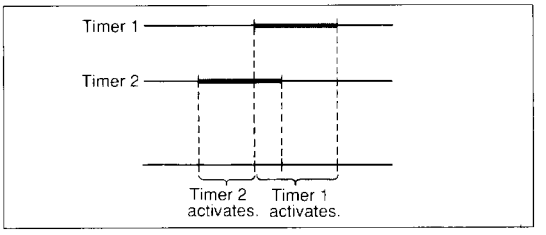
About the priority of the timer programs

When two or more timer programs overlap, priority is given in the order from Timer 1 to Timer 5.
For example, Timer 1 has priority over Timer 2.
Example 1 shows that Timer 2 cannot start to activate until the ending time for Timer 1.
Example 2 shows that Timer 1 starts to activate even during Timer 2.
In Example 3, Timer 2 is switched to Timer 1 once and is switched back to Timer 2 again after the ending time for Timer 1.

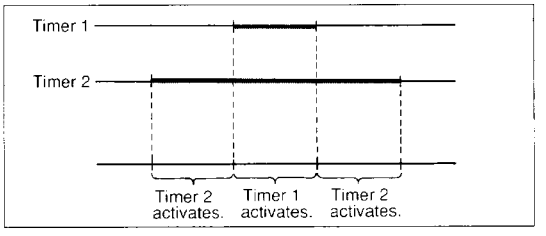
Example 1:



Example 2:



Example 3:



To use the sleep timer after setting the timer programs

Press SLEEP and tune in the desired station after setting the timer. The radio turns off by the sleep timer when you go to sleep, and turns on with another program by the timer when you wake up.

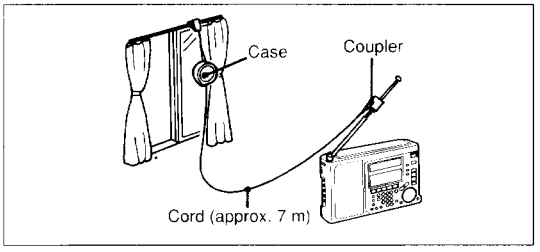
Note
The timer has priority over the sleep timer. Therefore, if the starting time of the timer comes during the sleep timer operation, the programmed station of the timer is tuned in.

To check the Program Time of the timer programs
While keeping TIMER CHECK/ERASE depressed, press the Station number (S1, S2, S3, S4, or S5) for the station to be checked. The Station Name and its frequency appears in the frequency display, and the "START TIME" and "END TIME" for that timer program appears in the clock/timer display.

External Antenna Connection

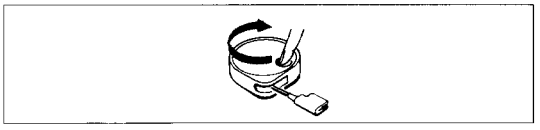
How to Use the Supplied SW Compact Antenna — For Better SW Reception

Usually the telescopic antenna is sufficient for SW reception. However, in a metal or concrete building, the use of the supplied SW compact antenna (AN-71) is recommended.



1 Fully pull out the cord from the case.
2 Attach the coupler to the telescopic antenna.
3 (When the window can be opened): Extend the cord and the case out through the window, after making sure there is no danger.
(When the window cannot be opened): Fully extend the cord along the frame of the window.

After using



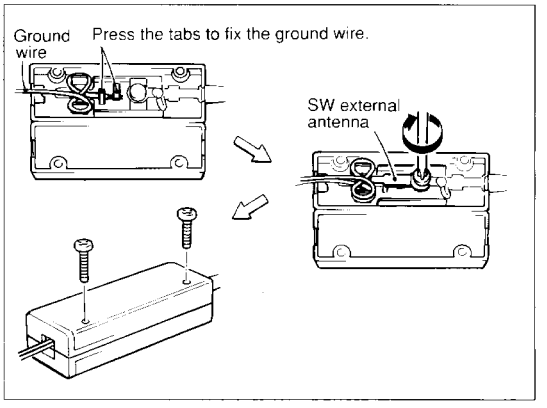
How to Use an External Antenna (Not Supplied)

For SW reception

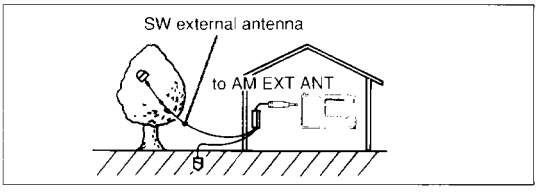
Usually, the telescopic antenna is sufficient for SW reception. However, in a building or for more stable SW reception, use an SW external antenna (not supplied) with the supplied antenna connector. You can also use the wide range antenna AN-1 or AN-102 (not supplied, see page 30 for details).

Connection

1 Connect the ground wire (if necessary) and the spade lug of the SW external antenna to the terminals on the supplied antenna connector, close the lid and tighten the screws.



2 Connect the antenna connector to the AM EXT ANT jack of the unit.



When reception is noisy, connect one end of a ground wire to the antenna connector as illustrated and the other end directly to a convenient earth ground.

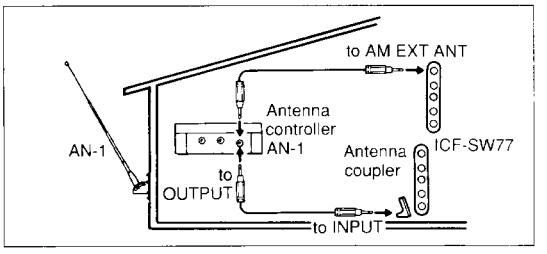
For LW/MW/SW Reception

Use the wide range antenna AN-1 or AN-102 (not supplied). There are two methods.

Method A
With a connecting cord, connect the OUTPUT jack of the antenna controller (supplied with the AN-1 or AN-102) and the AM EXT ANT jack of the ICF-SW77.

Method B (For LW/MW reception only)
1 With a connecting cord, connect the OUTPUT jack of the antenna controller and the INPUT jack of the antenna coupler (supplied with the AN-1 or AN-102).
2 Put the antenna coupler near the ICF-SW77.

Example: When the AN-1 is used.

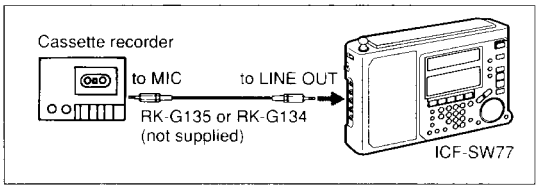


Notes
- When receiving MW or LW broadcasts without and external antenna, be sure to disconnect a SW external antenna. Otherwise, you cannot receive them as the built-in ferrite bar antenna does not function.
- Never connect a ground wire to a gas pipe. Doing so could cause a fire.
- If there is lightning, do not touch the wire of an external antenna and disconnect its AC power adaptor (if connected) immediately. Never touch the antenna wire during a lightning storm.
- When using an external antenna, retract the telescopic antenna.
- Locate the outdoor antenna as far away from the street as possible.
- For details about the external antenna, refer to its instruction manual.

Recording a Broadcast

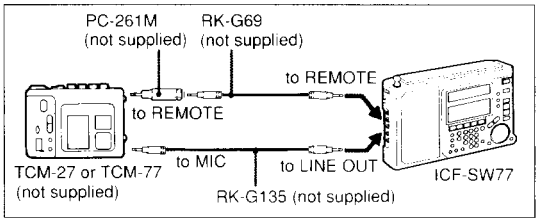
You can record radio programs by connecting a tape recorder to the LINE OUT jack as illustrated below. Use the RK-G135 connecting cord (not supplied) for monaural recording, or RK-G134 (not supplied) for FM stereo recording.

Tune in the desired station and start recording on the tape recorder.
The volume control setting on the radio has no effect on the recording.
Note: For FM stereo recordings you must connect the earphones to the PHONES jack. Otherwise, the sound cannot be recorded in stereo.



To start recording at the desired time

You can start recording at the desired time by connecting the Sony TCM-27 or TCM-77 cassette-corder (not supplied) to the LINE OUT and REMOTE jacks as illustrated below. Use an RK-G69 and an RK-G135 connecting cords (not supplied) and a PC-261M plug adaptor (not supplied).



1 Tune in the desired station.
2 Set the Timer (page 27).
3 Set the standby function of the cassette recorder.
For details, see the operating instructions of the cassette-corder.

Note on recording with the timer
You cannot start recording at a desired time if you use the cassette-corder not equipped with the timer standby switch.

Troubleshooting

The following checklist will help you solve most of the problems that you may encounter with this unit. If problems persist after you have checked the following items, please consult your nearest Sony dealer.

General

No clock/timer display
- Incorrect polarity of batteries. See page 8.
- Weak batteries.
- The display is in the Program Time indication mode.

→ Press the TIME/PROGRAM selector.

The display is dim.
- The unit is being used in extremely high temperatures or in a place with excessive moisture.

The display appears slowly
- The unit is being used in extremely low temperatures.

Sound is not heard at all.
- Weak batteries.
- Incorrect polarity of batteries. See page 8.
- The VOLUME control is set to "0."
- The headphone is plugged in.

Very weak or interrupted sound, or unsatisfactory reception.
- Weak batteries.
- Tuning or antenna adjustment is not correct.

→ Tune in precisely with the DIAL TUNE/JOG dial. For antenna adjustment, see page 17.
- Weak signal.

→ In a vehicle or in a building, listen near a window.
→ Set the SENS selector to DX.

No key input is acceptable.
- The KEY PROTECT button has been pressed.

→ Press KEY PROTECT again so that the 🔑 indication disappears.
- This may be caused by power noise.

→ Press the RESET button on the top panel.

The power of the radio does not turn on.
- The POWER/LOCK switch is set to LOCK.

→ Set POWER/LOCK to POWER.
- Weak batteries.

Tuning

A frequency cannot be input in direct tuning.
- The next key was not pressed within 10 seconds after a key has been pressed.

The frequency does not change by turning the DIAL TUNE/JOG dial.
- The DIAL LOCK switch is set to the direction of the arrow.

→ Release the DIAL LOCK switch.

Scanning does not stop.
- Weak signal.

→ Adjust the antenna.
→ Set the SENS selector to DX.

Timer Operation

The radio does not turn on at the preset time.
- The POWER/LOCK switch is not set to POWER.
- The Program Time is not set in that station.
- The timer is not in the standby mode.

→ Check if the number of the timer is displayed on the clock/timer display.

Error Messages

Error messages appear on the Station Name Area for a second three times.

"TRY AGAIN" appears during direct tuning when you input a frequency that is under or over the frequency range.

"MEMORY FULL" appears when you press ENTER when the memory capacity is full. (When you try to save more than 162 Frequencies.)

→ To memorize more Frequencies, erase unnecessary Frequencies. (See page 24.)

"TIMER" appears when you press any button while TIMER 🔑 is displayed.

→ Press the KEY PROTECT button so that the 🔑 indication disappears.

Specifications

Circuit system
FM: Single conversion superheterodyne
AM: Dual conversion superheterodyne

Frequency range

Type	Frequency coverage			
	FM*	LW	MW	SW
1	76.0–108MHz	150		29,999.9kHz
2	87.5–108MHz	150		29,999.9kHz
3	87.5–108MHz	150–285kHz	531	26,100kHz
4	87.5–108MHz	150–285kHz	531–1,602kHz	3,850–26,100kHz

*Stereo reception when using stereo earphones

Type 1: Countries that are not listed below
Type 2: Germany, Austria, and Scandinavian countries
Type 3: Saudi Arabia
Type 4: Italy

Intermediate frequency
FM:10.7MHz
LW/MW/SW: 55.845MHz (first)
455kHz (second)

Antennas
FM/SW: Telescopic antenna
MW/LW: Built-in ferrite bar antenna

Speaker
Approx. 125 × 77 mm (5 × 3 in.)
8Ω

Power output
400 mW (at 10 % harmonic distortion)

Outputs
Recording output jack (minijack)
Output level 138 mV (–15 dB)
Output impedance less than 10 kilohm
Earphone jack (stereo minijack)

Power requirements
6 V DC
Four R14 (size C) batteries
DC IN 6 V jack accepts:
- supplied AC power adaptor (except for Australian model)

Where purchased	AC power adapter	Operating voltage
North and South America except U.S.A.	AC-E602	110–120 V/ 220–240 V AC, adjustable, 50/60 Hz
U.S.A.	AC-E604	120 V AC, 60 Hz
United Kingdom	AC-E603	240 V AC, 50 Hz
Other countries	AC-E600	110–120 V/ 220–240 V AC, adjustable, 50/60 Hz

- DCC-E160L car battery cord (not supplied) for use with 12 V car battery

Battery life
Approx. 20 hours (FM reception)
Approx. 12 hours (AM reception)
of listening for fours hours a day at a normal volume, using Sony SUM-2(NS) batteries.

Dimensions
276 × 172.5 × 46.5 mm (w/h/d)
($10^{7}/_{8} \times 6^{7}/_{8} \times 1^{7}/_{8}$ inches)
including projecting parts and controls with antenna retracted

Weight
Approx. 1.48 kg (3 1/4 lb)
including batteries

Accessories supplied
AC power adaptor* (1)
AC plug adaptor* (1)
Stereo earphones (1)
Ear pad (2)
Carrying belt (1)
SW compact antenna (1)
External antenna connector (1)
"Wave Handbook" (1)
"How to Catch the Wave" (1)
"Preset Frequency List" (1)
*Not provided with certain models

Design and specifications subject to change without notice.

Note
This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

Accessories not supplied

Car battery cord
DCC-E160L

Connecting cord
RK-G69 (miniplug to miniplug, no resistor type)
RK-G134 (stereo miniplug to stereo miniplug, resistor type)
RK-G135 (stereo miniplug to monaural miniplug, registor type)

Plug adaptor
PC-261M

LW/MW/SW wide range antenna
AN-1, AN-102

Your dealer may not handle some of the above listed accessories. Please ask the dealer for detailed information.

Summary of the Operations

The following table shows a summary of the operations of the ICF-SW77. You can use this table as a quick reference for the operations. The illustrations show the buttons to press or the dial to turn. Two buttons linked with "and" means to press one button while keeping the other button depressed.
Refer to the pages indicated in ● for more details about each operation.

Tuning

Operation	Buttons to press (or dial to turn)
Direct tuning (⑯)	FM/AM , 0•••9 , EXE
Manual tuning (⑱)	FM/AM, DIAL TUNE JOG
Preset Station Tuning	
• Tuning Page (⑫)	+/−, S1•••S5 ,
• Timer Page (⑭)	TIMER PAGE , S1•••S5
• Quick Page (⑬)	QUICK PAGE , S1•••S5

Scanning

Operation	Buttons to press
Meter band scan (⑳)	METER BAND and , •SCAN AUTO TUNE
Auto tune (㉘)	S1•••S5 , •EDIT , •SCAN AUTO TUNE , S1•••S5

Preset

Operation	Buttons to press
Memorizing on Tuning Page (㉑)	+/−, ENTER and S1•••S5
Erasing (㉔)	S1•••S5 , •EDIT , TIMER CHECK/ •ERASE and S1•••S5
Memorizing on Quick Page (㉓)	QUICK PAGE , ENTER and S1•••S5

Editing

Operation	Buttons to press (or dial to turn)
Program time (㉑)	●EDIT ○, [start time] 0•••9, EXE, [end time] 0•••9, EXE ; +/−, ENTER ○ and S1•••S5
Station Name (㉒)	●EDIT ○, ◇, DIAL TUNE/JOG, EXE, ENTER ○ and S1•••S5

Timer

Operation	Buttons to press
Preset (㉑)	TIMER PAGE, ENTER ○ and S1•••S5
Check (㉘)	TIMER CHECK/●ERASE ○ and S1•••S5
Reserve (㉗)	RESERVE ○ and S1•••S5
Standby (㉗)	TIMER STANDBY ○